

# Europe's Environmental Issues



# Standard

SS6G8 Explain environmental issues in Europe.

- a. Explain the causes and effects of **acid rain in Germany.**
- b. Explain the causes and effects of **air pollution in the United Kingdom.**
- c. Explain the causes and effects of the **nuclear disaster in Chernobyl, Ukraine.**



Acid Rain  
in  
Germany

# Acid Rain

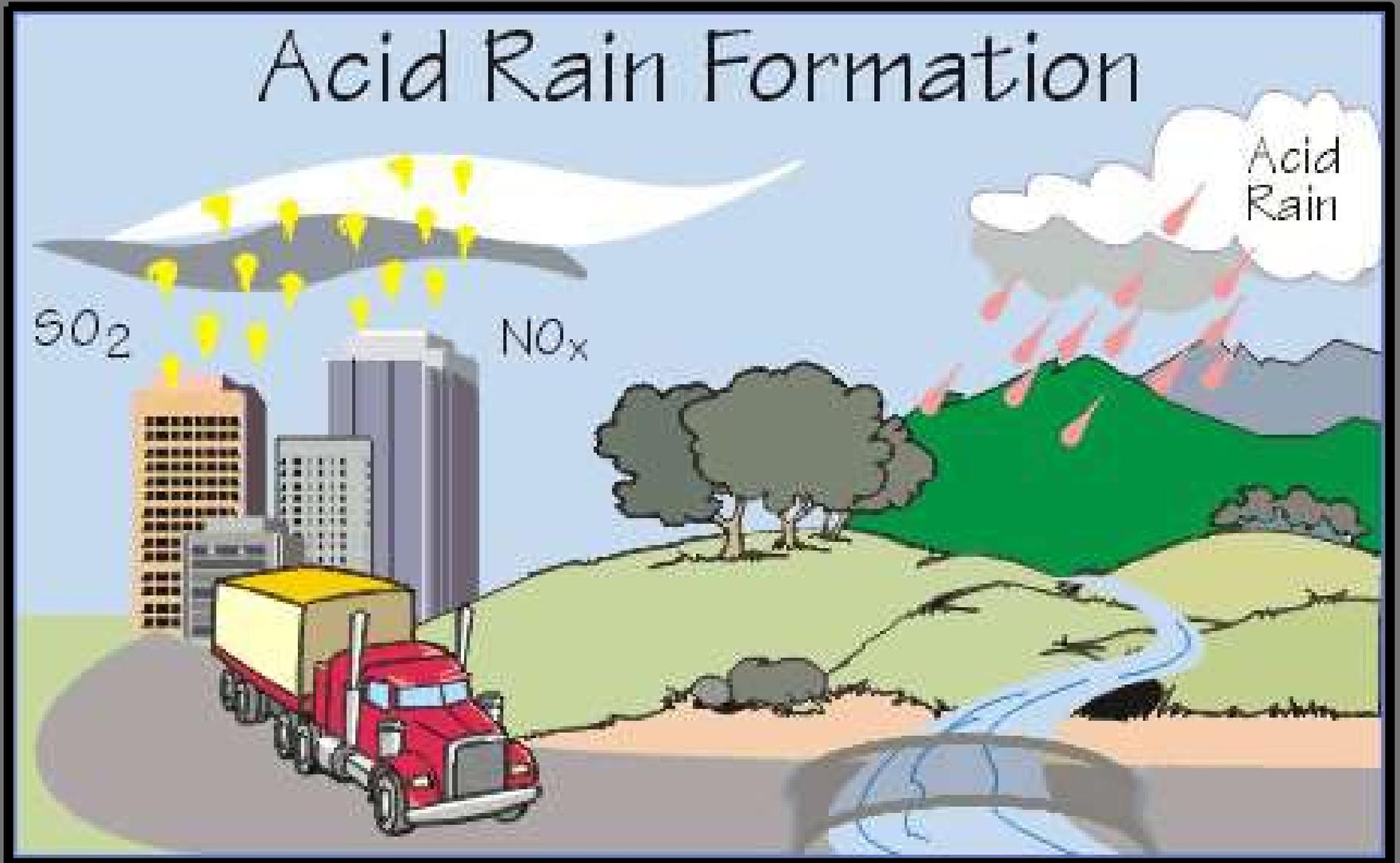
- Over the past 30 years, acid rain has been damaging Germany.
- It contaminates soil, kills trees, eats holes in the surfaces of buildings & statues, pollutes rivers, and harms wildlife.



# What is Acid Rain?

- Acid rain is a result of air pollution.
- When any type of fuel is burnt, a lot of different chemicals are produced and released into the air.
  - The chemicals mix with water in the clouds and come down with rain.

# Acid Rain Formation



# What is Acid Rain?

- The rain that falls has weak levels of acid mixed in.
- It's not acidic enough to burn your skin, but it is very harmful for the environment.



Left Branch shows needle loss and discoloration due to acid rain.

# Causes

- The main source of acid rain is smoke from factories (burning fuels like natural gas, coal, & oil).
  - Germany is a top manufacturing country. (It leads the world in cars, steel, & chemical products.)
  - The economy depends on these factories.
- Cars & buses also produce harmful gases.

# Effects

- Acid rain can effect trees in several different ways.
  - It dissolves & washes away the nutrients and minerals in the soil
  - It causes the release of harmful substances such as aluminum into the soil.
- Acid rain has destroyed nearly half of the Black Forest!
  - This has really harmed Germany's economy because one of its major natural resources is timber.



# Effects

- Acid rain causes the water in rivers and lakes to become more acidic.
  - Fish and other animals that live in these waters are dying, as well as the animals that drink from these waters.
- It also causes people to face harmful health hazards because the rain contaminates the drinking water in fresh water reservoirs.

# Effects

- Nitrogen and sulfur in acid rain are eating away at many of Germany's landmarks, causing buildings and artwork to deteriorate.
- Concrete, metals, limestone, and marble are all susceptible to acid rain, and many of Germany's cultural objects that are hundreds of years old are slowly corroding away.

# Acid Rain Can Cause Erosion in Stone Statues & Buildings



# Germany's Solution

- In Germany, power plants that use water power are replacing many coal-burning factories.
- They are developing new types of energy, such as wind turbines and solar power.
- Germany's government has passed laws to reduce emissions from cars and factories.



# Air Pollution in the United Kingdom

# Air Pollution

- Many of the world's largest and most industrialized countries are in Europe.
- European cities like Paris, London, Berlin, Rome, and Amsterdam tend to have a lot of factories, a lot of traffic, and produce a lot of air pollution.
- A country that has been greatly effected by this problem is the UK.



# UK's Air Pollution

- London, the capital of UK, is infamous for air pollution.
- The word “**smog**” was first used in 1905 to describe air in London (thick fog + smoke).
- Thick London smog happens when sunlight acts on the gases from factory or automobile exhausts, or when water in the air mixes with smoke particles.



# Causes

- In the past, the major source of air pollution was smoke from burning coal in factories.
  - The air quality in the UK began diminishing due to the smoke and air pollutants emitted from the burning coal.
- Today, exhaust from automobiles is the big problem.
  - Emissions from automobiles contain carbon monoxide and nitrous oxide, which stay close to the ground and contribute to low-lying smog.





Exmouth, Trafalgar Sq, Oxford Circus  
Marylebone 453

23006

London



LX03 HSY

T Trafalgar

# Effects

- Asthma and pneumonia are linked to vehicle emissions.
- Air pollution burns the lungs, nose, and eyes, and endangers human life.
- When air pollution levels are high, children, sick people, and the elderly have to stay inside to avoid breathing the hazardous air.



# Effects

- Air pollution also harms vegetation.
- Vegetation exposed to polluted air for long periods of time grows more slowly and is more susceptible to disease and insects.
- This causes a major decrease in

# UK's Solution

- Starting in the 1950s, UK's government has created smokeless zones in London where only smokeless fuels could be used.
- Electricity has also been used more in factories and homes.
- Laws have been created that require automobile makers to build cars that produce less exhaust.
- People have been asked to drive less and are encouraged to use public transportation or walk.

What is Europe  
doing to fix  
these problems?

# Environmental Policies

- In Western Europe, nations are trying to lessen pollution.
  - They are spending money and researching new ways to produce power that cause less environmental damage.
- In Eastern Europe, few nations are researching new technologies.
  - They have less money.

# European Union

- Most countries in Europe are members of a group called the European Union.
- Since its formation in 1993, the EU has passed policies designed to fight acid rain, improve air quality, restrict toxic waste, and reduce pollution.



Nuclear  
Disaster  
in  
Chernobyl,  
Ukraine



Lithuania

Belarus

Russia

Poland

Ukraine

Slovakia

Moldavia

Hungary

Romania

Rovno  
Chernobyl  
Khmel'nitski  
Kiev  
Pripyat

Zaporozhe  
South Ukraine

Odessa

# Nuclear Power

- Between 1922 and 1991, Ukraine was part of the Soviet Union and was known for its fertile farmland and successful agricultural industry.
- During the 1980s, many countries in Europe began using nuclear power plants to produce cleaner and cheaper energy in order to rely less on fossil fuels.
- Many European countries had strict regulations on nuclear power use; however, Ukraine did not.
- Chernobyl was a growing city in Ukraine, and it was home to the largest nuclear power plant in Europe.
  - Unlike other nuclear power plants, Chernobyl

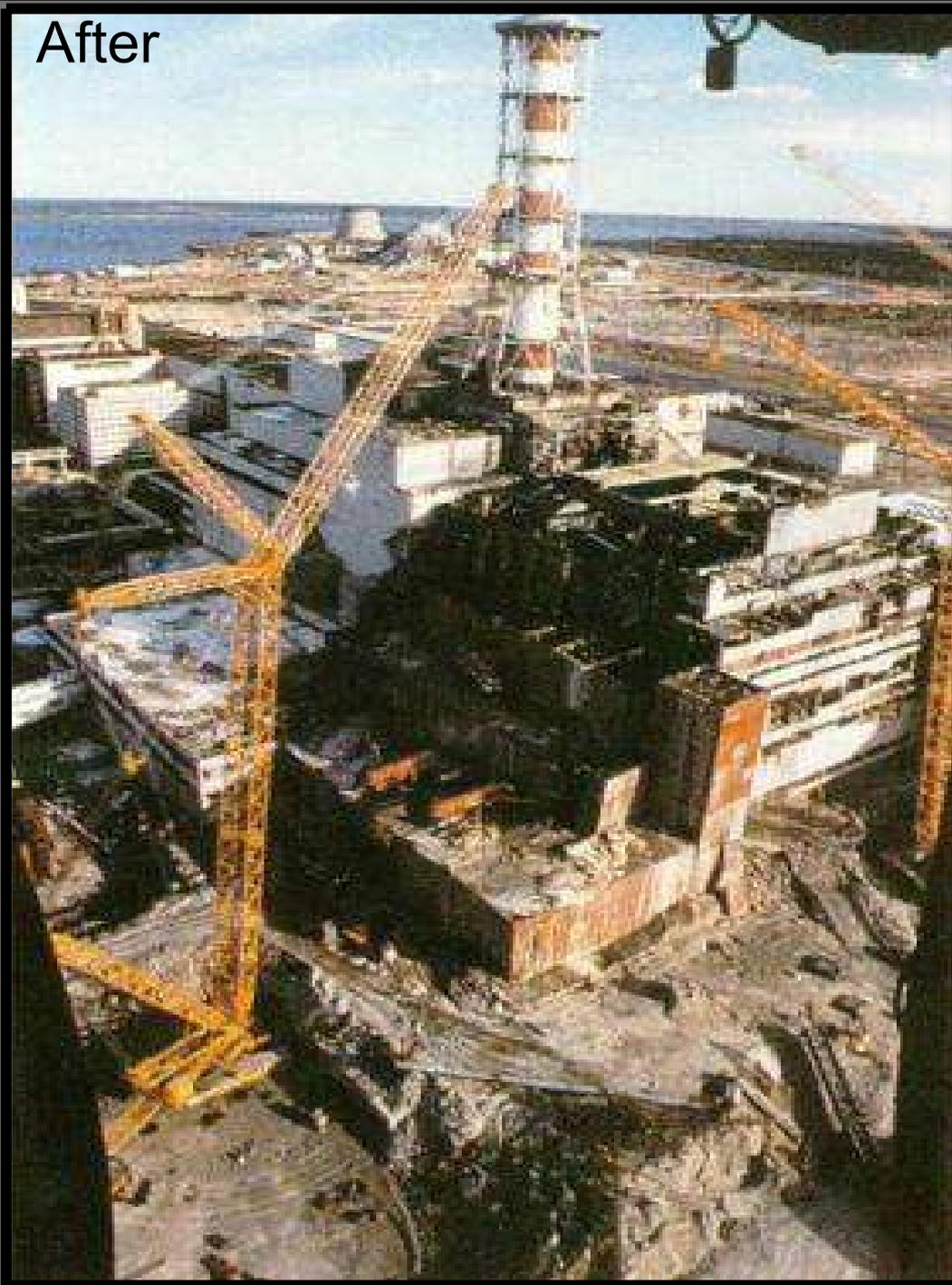
# Chernobyl

- In 1986, the Soviet Union generated 10% of the world's nuclear power.
- On April 26, 1986, one of the reactors at the Chernobyl nuclear power plant exploded.
  - The explosion released large amounts of deadly radioactive nuclear material into the

Before...



After

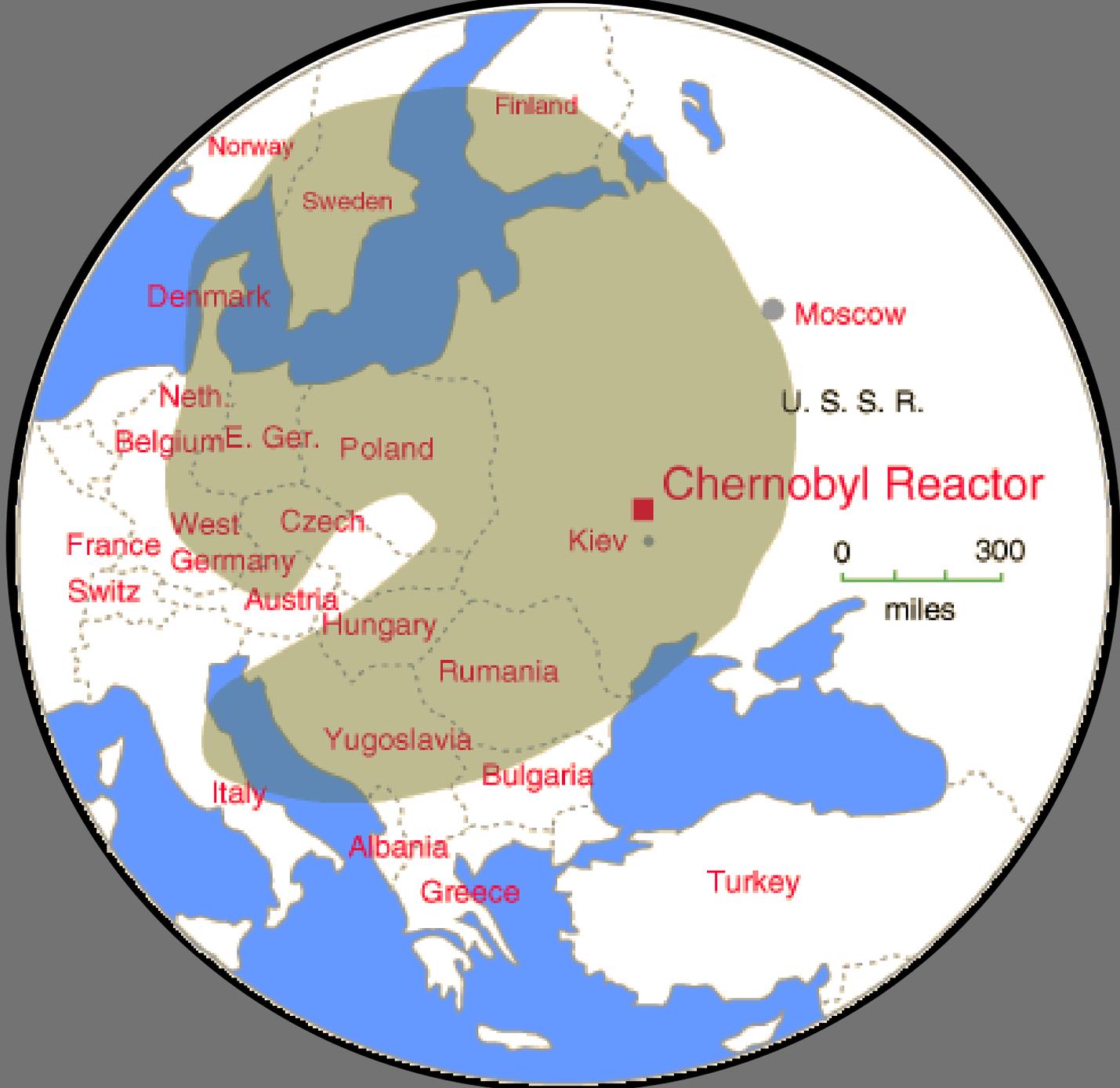


# How did USSR React?

- The morning after the explosion, there was no hint of a disaster.
- After 36 hours of being exposed to radiation, the people were finally told to pack their clothing and evacuate their homes.
  - There was a 30 kilometer (18 mile) evacuation zone.

# Worldwide Impact

- Nearly nine tons of radioactive material (90 times as much as the Hiroshima bomb) was hurled into the sky.
- Over the following days, winds mostly blowing north and west, carried fallout into Belarus, as well as Russia, Poland, & other countries around the world.



# Effects

- In the first months after the accident, 28 emergency workers died from acute radiation syndrome.
  - Doctors have noticed an increase in cases of cancer who lived nearby.
- Many animals died or got sick.
  - Fish in nearby rivers were unsafe to eat for many years.
- Millions of acres of farmland have been poisoned.

# Radiation Suits Worn By Workers



Radon-resistant suit (Hazardous Waste, Fibrous, & gaseous)  
Used at the 1980  
It was used to protect workers from the hazards  
of radon gas, a naturally occurring radioactive gas  
that can cause lung cancer. It was used in 1980  
at the site of the Chernobyl nuclear power plant  
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# Effects

- The people exposed to the high levels of radiation developed a high level of health problems, including thyroid cancer, autoimmune disorders, birth defects, and other health issues.



# Chernobyl Today

- Chernobyl continued to produce electricity for another 14 years, until international pressure forced its closure in 2000.
- An official exclusion zone around the plant remains in place, extending for 30 kilometers (18 miles).
  - It is one of the most radioactive spots on Earth.

# Chernobyl Today

- In 2011, Ukraine opened up an area so tourists can see first-hand the effects of the disaster.
- Forests surrounding the city have repopulated with a variety of wildlife and vegetation.
- Radiation levels are still so high that humans cannot live here for 20,000 years!



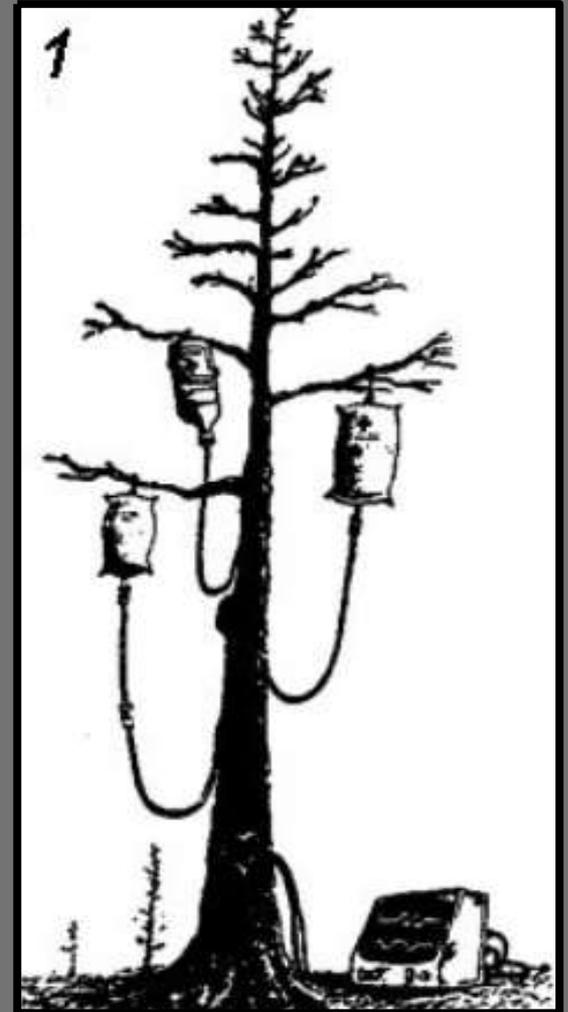
# Chernobyl Today A Ghost Town



# Cartoon Analysis

## Steps in Analyzing a Political Cartoon

1. Identify the characters, symbols, words, and objects in the cartoon.
2. Identify any literary techniques such as exaggeration, caricature, and irony.
2. Look for clues and details that would give further meaning.
3. Identify the main idea of the cartoon by reading the captions and putting the message into their own words.
4. Identify any bias the cartoonist might have.





Gene Kelly



Usher

